

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) An apparatus, comprising:
a bench having an optical component;
a groove formed in the bench, the groove configured to accommodate an optical fiber;
a ferrule, including a recess region to accommodate the optic fiber when the ferrule is mounted onto the bench, the groove and the ferrule being configured to passively aligning the optical fiber and the optical component on the bench and;
a cylindrical shaped connector sleeve defining a receptacle having a first opening located at a first end of the cylindrical shaped connector sleeve and a second opening located at an opposite second end of the cylindrical shaped connector sleeve, the first opening being configured to receive within the receptacle the silicon bench and ferrule and the second opening being configured to receive a plug-in connector within the receptacle of the cylindrical shaped connector sleeve, the silicon bench, ferrule and plug-in connector all configured to be optically aligned within the cylindrical shaped connector sleeve.
2. (original) The apparatus of claim 1, wherein the groove comprises but is not limited to one of the following types of shapes, V-groove or trench.
3. (original) The apparatus of claim 2, wherein ferrule is stepped in shape.
4. (original) The apparatus of claim 1, wherein the bench is made from etched silicon.
5. (original) The apparatus of claim 1, wherein the bench further comprises a lens or waveguide optically positioned between the optical component and the optic fiber.
6. (original) The apparatus of claim 1, wherein the optical component is a optical receiver.

7. (original) The apparatus of claim 1, wherein the optical component is an optical transmitter.
8. (cancelled)
9. (original) The apparatus of claim 1, wherein the bench further comprises a plurality of optical components, lenses or waveguides and grooves, each of the grooves configured to accommodate one of a plurality of fiber optic cables respectively, and wherein the ferrule includes a plurality of the recess regions to accommodate the plurality of optic fibers when the ferrule is mounted onto the bench, the groove and the ferrule being configured to passively aligning the plurality of optical fibers and the plurality of optical components on the bench respectively.
10. (previously presented) A method of assembling an optical connector, comprising:
positioning an optical component and lens or waveguide onto a bench;
inserting a fiber optic cable into a stepped ferrule which accommodates the bench;
placing the ferrule in a groove on the bench, the groove and ferrule cooperating together to optically align the fiber optic cable and the optical component on the bench; and
providing a cylindrical shaped connector sleeve around the silicon bench and ferrule, the cylindrical shaped connector sleeve including a first opening located at a first end of the cylindrical shaped connector sleeve to receive the silicon bench and ferrule and a second opening located at a second opposite end of the cylindrical shaped connector sleeve configured to receive a plug in connector that optically couples the fiber optic cable with an optical network or link, the silicon bench, ferrule and plug-in connector all optically aligned within the cylindrical shaped connector sleeve.
11. (original) The method of claim 10 further comprising fabricating the bench including the groove by etching a silicon substrate.

12. (original) The method of claim 10, further comprising fabricating the ferrule to include a stepped portion.
13. (original) The method of claim 10, further comprising providing a lens between the optical component and the fiber optic cable.
14. (original) The method of claim 10, wherein the optical component is an optical receiver.
15. (original) The method of claim 14, wherein the optical component is an optical transmitter.
16. (cancelled)